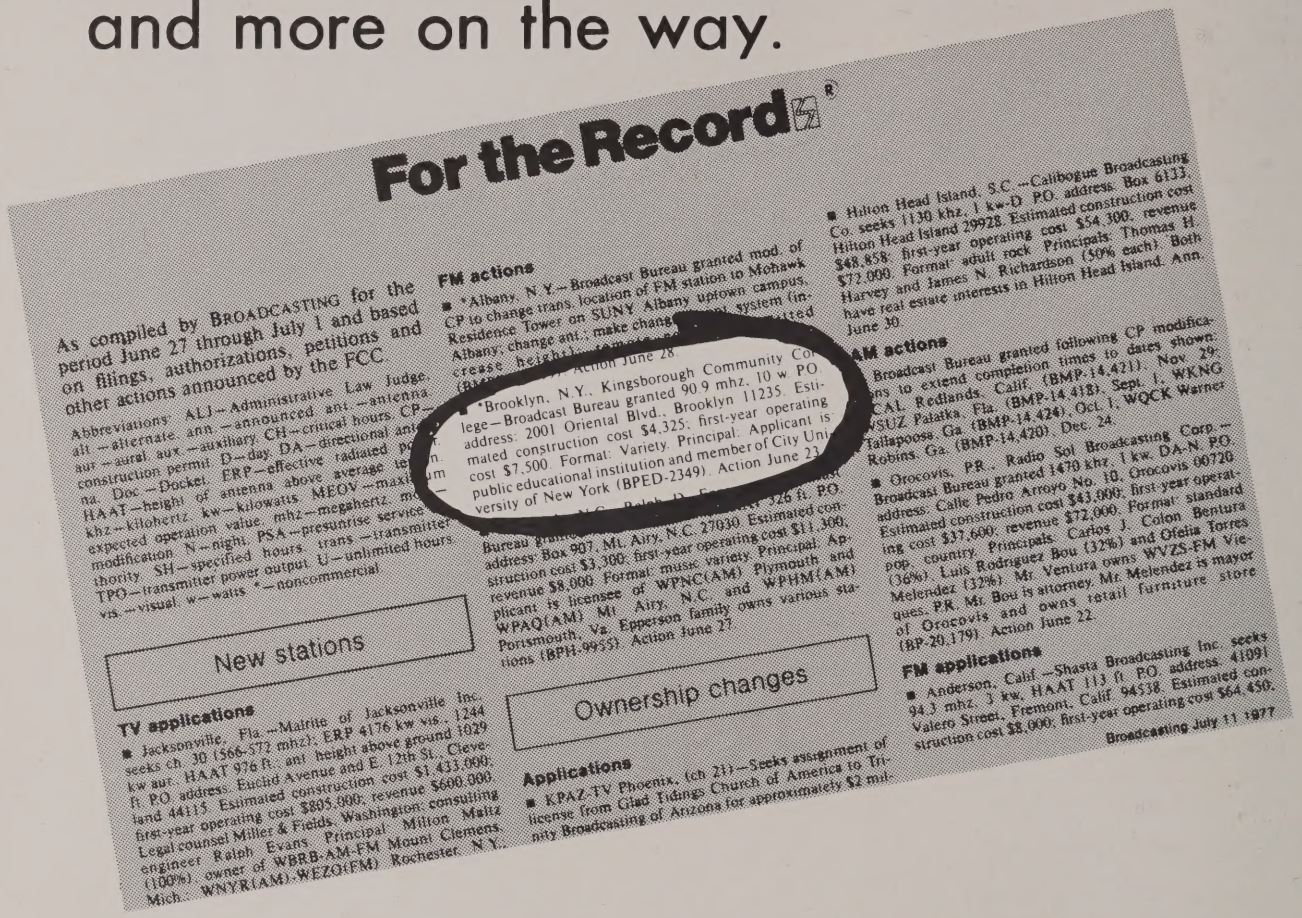
the journal of college radio

VOLUME 15, NO. 3

IBS CONVENTION IN NEW YORK!

Everyone Invited

Our fiftieth station, and more on the way.


For the Record®

As compiled by BROADCASTING for the period June 27 through July 1 and based on filings, authorizations, petitions and other actions announced by the FCC

Abbreviations: ALJ—Administrative Law Judge. alt—alternate. ann—announced. ant.—antenna. aur—aural. aux—auxiliary. CH—critical hours. CP—construction permit. D—day. DA—directional ant. Doc—Docket. ERP—effective radiated power. HAAT—height of antenna above average terrain. kw—kilowatts. MEOV—maximum expected operation value. mhz—megahertz. mi—khz—kilohertz. modification. N—night. PSA—presunrise service. thority. SH—specified hours. trans—transmitter. TPO—transmitter power output. U—unlimited hours. vis.—visual. w—watts. *—noncommercial.

New stations

TV applications

■ Jacksonville, Fla.—Mallrite of Jacksonville Inc. seeks ch. 30 (566-572 mhz); ERP 4176 kw vis., 1244 kw aur. HAAT 976 ft. ant. height above ground 1029 ft. P.O. address: Euclid Avenue and E. 12th St., Cleveland 44115. Estimated construction cost $1,433,000; first-year operating cost $805,000; revenue $600,000. Legal counsel Miller & Fields, Washington; consulting engineer Ralph Evans. Principal: Milton Maltz (100%), owner of WBRB-AM-FM Mount Clemens, Mich., WNYR(AM)-WEZO(FM) Rochester, N.Y.

FM actions

■ *Albany, N.Y.—Broadcast Bureau granted mod. of CP to change trans. location of FM station to Mohawk Residence Tower on SUNY Albany uptown campus, Albany; change ant.; make chang... system (increase... Action June 28.

■ *Brooklyn, N.Y.—Kingsborough Community College—Broadcast Bureau granted 90.9 mhz, 10 w. P.O. address: 2001 Oriental Blvd., Brooklyn 11235. Estimated construction cost $4,325; first-year operating cost $7,500. Format: Variety. Principal: Applicant is public educational institution and member of City University of New York (BPED-2349). Action June 23.

Bureau granted ... 926 ft. P.O. address: Box 907, Mt. Airy, N.C. 27030. Estimated construction cost $3,300; first-year operating cost $11,300; revenue $8,000. Format: music variety. Principal: Applicant is licensee of WPNC(AM), Plymouth and WPAQ(AM) Mt. Airy, N.C. and WPHM(AM) Portsmouth, Va. Epperson family owns various stations (BPH-9955). Action June 27.

Ownership changes

Applications

■ KPAZ-TV Phoenix, (ch. 21)—Seeks assignment of license from Glad Tidings Church of America to Trinity Broadcasting of Arizona for approximately $2 mil...

■ Hilton Head Island, S.C.—Calibogue Broadcasting Co. seeks 1130 khz, 1 kw-D. P.O. address: Box 6133, Hilton Head Island 29928. Estimated construction cost $48,858; first-year operating cost $54,300; revenue $72,000. Format: adult rock. Principals: Thomas H. Harvey and James N. Richardson (50% each). Both have real estate interests in Hilton Head Island. Ann. June 30.

AM actions

Broadcast Bureau granted following CP modifications to extend completion times to dates shown: ...CAL, Redlands, Calif. (BMP-14,421), Nov. 29; ...VSUZ, Palatka, Fla. (BMP-14,418), Sept. 1; WKNG, Tallapoosa, Ga. (BMP-14,424), Oct. 1; WQCK, Warner Robins, Ga. (BMP-14,420), Dec. 24.

■ Orocovis, P.R., Radio Sol Broadcasting Corp.—Broadcast Bureau granted 1470 khz, 1 kw, DA-N. P.O. address: Calle Pedro Arroyo No. 10, Orocovis 00720. Estimated construction cost $43,000; first-year operating cost $37,600; revenue $72,000. Format: standard pop, country. Principals: Carlos J. Colon Bentura (36%), Luis Rodriguez Bou (32%) and Ofelia Torres Melendez (32%). Mr. Ventura owns WVZS-FM Vieques, P.R. Mr. Bou is attorney. Mr. Melendez is mayor of Orocovis and owns retail furniture store (BP-20,179). Action June 22.

FM applications

■ Anderson, Calif.—Shasta Broadcasting Inc. seeks 94.3 mhz, 3 kw, HAAT 113 ft. P.O. address: 4091 Valero Street, Fremont, Calif. 94538. Estimated construction cost $8,000; first-year operating cost $64,450.

Broadcasting July 11 1977

Kingsborough Community College, Brooklyn, New York, is Educational FM Associates' fiftieth client to be granted a Construction Permit by the Federal Communications Commission.

We're proud of that, because at Educational FM Associates we specialize in helping colleges and schools establish non-commercial FM radio stations.

We also help existing stations maintain their facilities, increase their power, and renew their licenses.

If you're considering an application for a new station at your school, or want to upgrade a station already on the air, call or write us for more information today.

As a client of Educational FM Associates, you'll receive our prompt, personal attention.

Before we begin a project, you'll understand every step of the process, how much it will cost, and how long it will take. We'll even provide you with samples of similar work approved by the FCC, so you'll see just what your completed study or proposal will look like.

And you can be assured your final application will be prepared in the most professional, efficient manner possible. All Educational FM Associates work is supervised by Edward F. Perry, Jr. In addition to serving as President of Educational FM Associates, Mr. Perry is the licensee of several commercial radio stations, serves on the Board of Directors of a non-commercial radio station, and is active in many broadcast industry organizations.

During the past five years Educational FM Associates has worked with more college radio stations than any other firm. Perhaps that's why we've become known as the most experienced consultant to non-commercial radio in the country.

We're proud to have helped fifty new broadcasters reach the air. We'll be even prouder to help make *you* number fifty-one!

EDUCATIONAL FM ASSOCIATES • 19 Bolas Road • Duxbury, Massachusetts 02332

Telephone: (617) 585-9200

the journal of college radio

February, 1978
Vol. 15, No. 3

Editors
RICK ASKOFF
DICK GELGAUDA
NORM PRUSSLIN

Published by the
Intercollegiate Broadcasting
System, Inc.

Sales Office
Journal of College Radio
Box 592
Vails Gate, N.Y.
12584

in this issue:

The JOURNAL OF COLLEGE RADIO is published five times per year by the Intercollegiate Broadcasting System, Inc. (a non-profit organization). Editorial, publishing and sales offices are located at 339 Windsor Highway, Newburgh, NY 12550. Address all correspondence to the JOURNAL OF COLLEGE RADIO, P.O. Box 592, Vails Gate, NY 12584.

The JOURNAL OF COLLEGE RADIO was founded in 1941 by the Intercollegiate Broadcasting System, Inc., using the title IBS Bulletin. The name was changed in 1955 to IBS Newsletter. In 1964 it became College Radio and in 1969, The Journal of College Radio.

Annual subscription price is $5.00. Single copy price $1.00; outside U.S.A. add $1.00 per year for postage.

Send subscription order and changes of address to Circulation, The Journal of College Radio, Box 592, Vails Gate, N.Y. 12584. On changes please include both old and new address plus address label from back of Journal if possible.

Application to mail at second-class postage rates is pending at Newburgh, N.Y. 12550

CONTINGENCY MANAGEMENT: "IT DEPENDS"

Leadership Styles

Some stations just exist, limping along from one emergency to the next. Others are healthy, growing, and doing a good job serving their listeners. Is it money? Is it the fact that they have a strong major with good people in it? Speaking from experience, that is, being faculty advisor of WVSS-FM (U. of Wisconsin at Stout), I can say that those things are helpful, and nice to have, but are not necessarily the key ingredients. WVSS has been fairly healthy. We started serving our audience eight years ago with 20 hours a WEEK programming. Now we're 118 hours a week, with 40 shifts serving that audience. Our power has been increased from 10 to 1,000 watts and the stereo light now comes on at 90.7 when you scan the dial.

Why? I think it's our concern with developing managers. Management can be called the artistic-science, or the scientific art form. There are lots of eagerly proponded theories of "correct" management. And, of course, each theory is better than the previous one. The more books I read on management, and the more I manage, the less I know for certain.

Having founded two different stations in the last 10 years I think I've seen most of the possible management problems. In addition, I've visited Commercial and Public Broadcasting stations, worked in some, and taken graduate courses in management because I wanted to see what other people did. While doing this, I came to believe the "x-y theory", then, I swung between too little and too much organization. However, reality is a hard task master, so I finally patched together something that works for me in my particular situation.

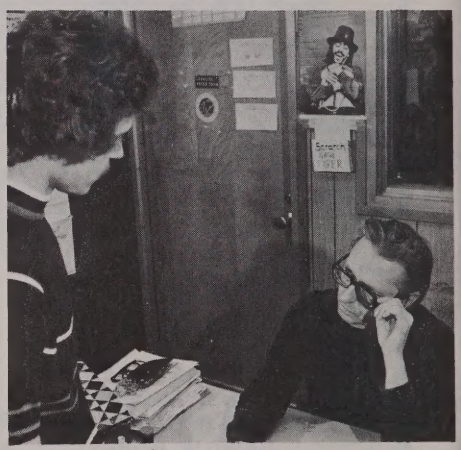
In my last trip to the fountains of knowledge, I found that, low and behold, the "patched together something that works" theory has a name and everything. It's called "contingency theory." Contingency means . . . **it depends** (on the circumstances, the station, the kind of people involved, and the purpose of the management).

When you're younger, you're looking for THE ANSWER. As you gain more experience, you'll begin to wonder if there is an answer, or even if it matters.

So, a bit of advice, as you study management: Please don't be anxious to seize upon one theory, even this one. The answer to **any** question about management is "it depends." I'll try to show you some of the things it may depend on.

The first factor about management that we'll consider is leadership style. Let's look at three possible management styles and see what is good in each type and when and where it might be good. Then, we'll do some "patching together."

THE AUTHORITARIAN-SOB LEADERSHIP STYLE



" This is what you'll do."

Meet the AKG "Enhancers"

Professionals throughout the world are using the unique Torsional Transmission Line Principle in our big Studio Standard BX-20E. It duplicates and enhances natural reverberation with a control and predictability not possible with natural "vibes."

Now the Torsional Transmission Principle is available in the first truly *portable* reverb. Our two-channel, studio quality BX-10E.

It lets you adjust independent decay time of 1.5, 2.5, or 3.5 seconds. There's also separate high frequency and low frequency equalization for each channel. A reverb/dry signal mix for each channel as well. Input sensitivity selection of +12, +6, –6, and –22dBm. And a stereo/mono switch.

The BX-10E uses motional feedback circuitry, so instant variation of decay time is possible during recording. You can make dynamic adjustments to a score while it is being recorded. The BX-10E features an ingenious two point pendulum suspension within an insulated case with a foam lining. You can use the BX-10E near monitors without fear of acoustic feedback or structure-borne sound and vibrations.

Despite all it has going for it, the BX-10E is only 17 x 12 x 19 inches small and weighs only 45 pounds. Visit your AKG professional dealer for a personal introduction. Or write to us.

AKG acoustics

The Mark of Professional Quality.... in microphones, headphones, phonocartridges, reverb units.

PHILIPS AUDIO VIDEO SYSTEMS CORP.
A NORTH AMERICAN PHILIPS COMPANY
91 McKee Drive, Mahwah, N.J. 07430 • (201) 529-3800

The Authoritarian style is what most people think of when they think of a leader. A good Authoritarian leads by sheer force of his/her personality and knowledge. The "followers" do what s/he requests because they believe the leader will see them through.

The common virulent variant of this style is the SOB. The SOB demands immediate respect and results, a good Authoritarian leader commands respect, which is quite different.

At a station I know, the manager is a former DJ, full of enthusiasm, eager to make a lof of money quickly. He is a very poor people person. He demands a job done immediately, then when you bring it in, he looks puzzled as if to say, "Why is that here now?" His employees hate him with a passion, although they hang on to their slightly above minimum wage jobs because they're hoping for the big break.

The only thing the SOB commands is fear, anger, and frustration.

It is all too easy to slip into the SOB role. At WVSS we started out to be Democratic. The students demanded (ahah, the seeds of destruction right there) that the station constitution permit no outside interference. They also demanded that nobody (especially a faculty advisor) tell them what to do. **Power to the people** I believe was the slogan back in 1969. As soon as the two guys who had set up the Democracy assumed power they became instant SOB's.

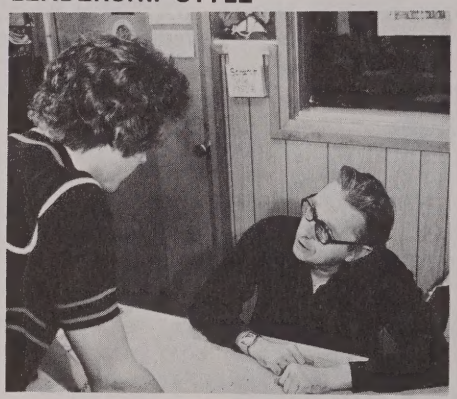
There is no SOB like an inexperienced SOB. He or she knows nothing, so has to pretend. He or she has little real faith in their abilities and less in those of their followers. Instead of leading from knowledge and ability, as a good Authoritarian would, the SOB leads from stupidity and with aggressive strategies leading to dehumanizing results.

FOR EXAMPLE: **"God damn it, we're going to become an AOR station, and you'll do what I want you to do, or get out!"**

Many people fall into the SOB style immediately because it is the easiest to work with over a short term if you're very insecure with yourself. At a college station that has a radio major, the followers will take any form of abuse as they struggle for the brass ring and eventual success in a top 50 market station.

Unfortunately, those same followers will bide their time, jockey for position, and finally reach a position of leadership where they can now become the biggest SOB on the block themselves. Live and don't learn.

THE DEMOCRATIC- MARSHMALLOW LEADERSHIP STYLE



"Say, that sounds like a good idea."

The second type of "good boss" involves the guy or gal who is more low key but who can also be effective. He or she makes the followers feel that they are not just interchangeable pieces of an unknown puzzle.

The Democratic leader really does want to consult. He/she realizes that there are lots of good ideas out there. A happy worker **may** be a more effective worker. A worker who has some control over his work and environment **may** be better able to meet the organizational goals.

The ineffective Democratic leader we can call the Marshmallow. Like the SOB, the Marshmallow is ineffective in the long run but for different reasons.

Marshmallows are ineffective because they are wishy-washy. Push them in one spot and they bounce back in another. Pound on them and they absorb the blows and say, **"So that's what you really think, eh?"** Do they accomplish anything? Not if it will offend anyone.

The worst kind of Marshmallow is the closet SOB. He or she consults and puts on the trappings of Democracy and then turns around and does what was in their minds from the beginning anyhow.

A Marshmallow is not so much a leader as a tester of the waters. I find myself in that position sometimes. Instead of pressing for the removal of a person who is fouling up our organization, I'll stand back, trying to be Mr. Nice Guy, until some department is ready to collapse.

The pressures of keeping a station on the air and functioning can become unbearable. The people you least need on your staff are those who make promises they do not keep. The Marshmallow in your midst is no help. S/he just says, **"Well, maybe next time we can work it out. Right now we have to get back on the air."**

There are some who say that the Democratic approach, with input from all sides, will not work in any organization. A radio station, especially, must make up its mind and go there. And since a collective mind is, by some people's definition, a weak one, an Authoritarian leader is best. Still, several newspapers in France, the four major symphony orchestras in London, and a number of manufacturing plants throughout the world have been experimenting with Democracy. It seems to work for them, in their circumstances.

"Now, let's not rock the boat."

At WVSS the Authoritarian, especially an SOB, would soon put us out of commission. We have no major or minor in radio or speech. We have no money to give out. We have no hold over the hearts, minds, and bodies of the followers.

Well then, how about no hold at all?

THE LAISSEZ-FAIRE- SHADOW LEADERSHIP STYLE

Laissez-faire means, according to my friendly French teacher next door .

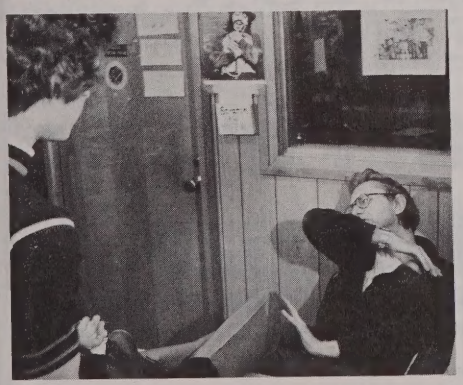
. . "to allow to do." In this theory of management, the expert (or manager) sits in the shadows and waits to be asked.

I'm very attracted to Laissez-faire management but I'm not quite sure how to get there in my present situation. In this theory, each person in the organization makes his/her knowledge available to whoever needs it. That sounds like a good idea. And since I have the knowledge, that makes me the chief Laissez-faire.

The major problem of the Laissez-faire management style is that the people who need to work together must understand the goals of the organization so well that their personal goals do not interfere with the organizational goals.

Some Laissez-faire faculty advisors become The Shadow. **"Who knows what evil lurks in the hearts of men? The Shadow knows."** But unlike Lamont Cranston, these shadows are simply that. They sit by and watch things fall around them, refusing to interfere. They won't even point out the goals, much less indicate how the station might reach them.

The problem with most inexperienced managers in relationship to the Laissez-faire leader and his counterpart the Shadow is that their ego's are so fragile that they cannot ask for help. Other egos are so strong that there is nothing they need to know. A manager has to know who he or she is before they can ask for or admit they need help.



"Don't ask me, I got my problems too."

Again, many a Shadow is an SOB in disguise. The Shadow, who knows, sits back wanting to be begged to help. Or worse, they are delighted with other people failing. They are smug in the knowledge that, **"if only they'd asked me, I could have helped."**

Why don't others consult the Shadow more often? It may be that he or she is so threatened by the Shadow that they would rather not put themselves in that position.

Unless the followers, or sub leaders, can ask the Laissez-faire leader for information, the system collapses. Unless that information is presented in a way that can be used, and in a style that doesn't destroy the person asking the question, having the information is useless.

The SOB, the Marshmallow, and the Shadow have built-in failure mechanisms.

Once a person has found a leadership style that suits his personality, he or she has to become a **good** example of that style. Any group would really rather avoid the SOB or the marshmallow, or the shadow, in any guise.

For example, the Chief Announcer sends down directives to the DJ's which are a little abusive. They become more so. Soon the Chief Announcer is complaining about the dummies he/she has to work with. More lashes of the whip follow. The slaves at the oars start looking for a way to loosen their chains. The Authoritarian becomes the SOB.

I could very easily become an Authoritarian leader. After all, the school has appointed me as faculty advisor. If anything goes wrong, it's going to be my butt that takes the heat. From Authoritarian to SOB is but a simple step. Over the years, however, I have come to believe that an open, consultative approach can work.

My second hat is that of the Laissez-faire leader. I have quite a bit of knowledge. Anybody who asks me will find me more than willing to think over the problem with him or her.

I do not chair the meetings of our Democratic Advisory Council. I do ask questions (non-threatening I hope). I do point out the goals: "How does this fit in with our theory that we should serve the audience? Do we want to change our operation?"

While I could say, **"No, we won't do that."** I never have. Nor do I sit in the Shadows. I'm part of the group, and I say what I think. When we make a decision, even if I don't agree with it, I'll be the first one in line to try to make it work.

That approach is very difficult for me sometimes, because the Authoritarian in me is very strong. Often, I'm surprised at how well the group decisions work out. Sometimes

I am disappointed. Occasionally I'm tempted to say, **"I told you so!"**

This is why I'm suggesting that you as a leader develop the ADL — Authoritarian - Democratic - Laissez-faire approach. It is a contingency style. Which part of ADL you use, when and where, depends on the situation.

In an emergency, when the ship is sinking and all hands are rushing around frantically, a strong leader (but not a SOB) is very helpful for putting things on an even keel again. Until the ship is righted, there may be no use consulting. Let's keep from going down. Many people will accept and welcome that kind of approach in an emergency. (When does the emergency end? How do you relinquish power gracefully?)

The Democratic-group process is difficult. Many of us just **know** that what we're going to suggest is the best idea ever generated. If you trust each other, have respect for other people and their ideas, and if you have the goals of the organization clearly in mind, Democracy does work.

The Laissez-faire leader can function within a Democracy. He can work well if the people who need the expertise know they need it, ask for it, and use that knowledge to solve the problem, meet the goal.

Often at meetings of the Advisory Council I have to point out an FCC regulation, a school rule, the results of the survey, or act as historian to reveal what happened last time we tried something similar. Very seldom do I have to say, **"I don't think that's a good idea."** Somebody else almost always realizes the problem and says so.

To go back to the original question: **Which management theory is best?** All of them can be applied successfully depending on the situation. Knowing what method to use when is the real secret. The second part of the question is **which one suits your personality and your organization?**

Perhaps a better question is: **What should a good leadership style accomplish for a given organization? Is there one style that accomplishes it better than another?**

CONTINGENCY: "It depends"

1. What should the organization be accomplishing?
2. For whom (listeners, managers, staff)?
3. What is the cost of accomplishing our goal? (Not necessarily in money, but in resources and people.)

The goals will vary with the radio station. Do you want your management:

1. To simulate the real world (is SOB best for that?)
2. To train people to assume leadership (is the Democratic best for that?)
3. To keep the station operating satisfying listeners, funders, and staff (is ADL best for that?)
4. To keep the managers and staff happy and functioning (is the Democratic best for that?)
5. To keep managers learning (is the Laissez-faire best for that?)

You may need one kind of leadership in a crisis and another in the day to day situation. Before you make an irrevocable decision, experiment and observe. Which style really accomplishes the goals of your station (not your goals) . . . what works, why . . . for whom . . . in what contingencies?

★★★★★★★

IBS NATIONAL CONVENTION

Plans For IBS National Convention Program Announced

The program chairperson of the IBS National Convention, Karen B. Anderson, has approved a special advance program schedule for the March 17, 18 and 19, 1978 IBS National college radio meeting, to be held in New York City. The process of searching for guest speakers, sessions facilitators and panelists is now underway. Since the convention is in New York, it is expected by the program committee that some highly qualified guest speakers will be coming to the convention from prominent New York stations and media concerns. As soon as guest speaker commitments are made, the names of those agreeing to come to the convention will be sent to prospective delegates from college and high school stations.

Friday will be an especially busy day, and once again the convention committee is urging that all delegates plan an early arrival. Convention activities start at 12:00 noon, as registration gets underway, and there will be tours of New York broadcasting facilities, convention orientation sessions, and exhibits of broadcast equipment in the large exhibit hall. At 3:00, the sessions start with three large panel discussions taking place simultaneously. There will be a panel discussion on management/FCC issues, one on Public Affairs and News and one entitled "Balancing Station Formats: The Art of the Program Director."

Following these large sessions, IBS plans to hold 14 "mini" sessions on topics relating to those explored in the large panel sessions above, including "FCC Docket 21136"; "What happens when the field engineer knocks"; "EBS Revisited"; "Selling Time"; "Managing the New Station"; "News Directing: Strategy and Follow Through"; "Programs for/by Minorities"; "Programs for/by Women"; "Beginning a News Operation"; "Basic Carrier Current Engineering"; "Classical Programming, for Everybody"; "AOR Programming"; "Contemporary Top-40 Programming"; and "Studio Design and Maintenance."

After dinner on Friday evening, there will be an additional 12 sessions scheduled on the following topics: "High School Station Issues"; "Jazz Rhythm Programming"; "Individual Station FCC Questions"; "Faculty/Staff Rap"; "The New Copyright Law"; "$ and how to get them"; "Computer Applications in College Radio"; "Remotes and Telco"; "Music Director's Forum"; "Developing and Increasing Audience Awareness"; "Fitting the News to the Audience"; and "Station Training Programs."

After these Friday evening sessions finish up, the delegates will have a chance to relax and party at the Record Company and Exhibitor Hospitality Suites, taking place from 9:00 Friday evening until some indefinite point later on.

Saturday morning sessions will be organized according to an ingenious "track" system that enables different subjects to be covered according to the proper amount of time necessary to the subject. It also enables some sessions to take extra time in a session room, if necessary. Among the topics presented in the three hour block of time (between 9:00 and 12:45) will be: "Carrier Current Engineering II"; "FM Engineering"; "Going FM and/or Increasing Power"; "Sportscasting"; "Station Promotion and Public Relations"; "Management Development Clinic"; "Record Libraries"; "Getting your Third"; "Programs for/by Children"; "Budgeting Strategy and Techniques"; "$$ and how to get them (repeat session)"; "Doing Production with Minimal Equipment"; "Broadcast Style and Delivery"; "Computer Rap Session"; "News Writing and Delivery"; "Writing Clinic: Promo's, PSA's and Commercials"; "Special Public Affairs Programming: Documentaries, Serials and On-site Coverage"; and finally, there will be extended registration and equipment displays taking place at the same time.

Following the Convention Luncheon, in the Biltmore Hotel's Grand Ballroom, there will be a final round of panel and "mini" sessions for the day. Topics include the ever-popular "Record Company Forum"; the "Management Problems Forum"; and a session on "New Waves in College Radio: CPB, New Legal Implications, School Administrators, and other problems." Smaller sessions following these will include: "Staff Motivation and Rejuvenation"; "Fusion Programming"; "Playlists: the Care and Feeding of Record Companies"; "Programs for/by the Community"; "Planning your Station Growth"; "Licensee Control"; "Station Security"; "Audience Survey's and Ascertainment"; "Relationships with other stations in your market"; "Grants, Gifts, Funding and Acutions"; "The New Copyright Law (repeat session)"; "The Reporter's Job"; "Music Director's Forum"; and finally, "Cable FM: a non-engineering perspective."

Sunday morning sessions will consist of a large session on "Finding a Job," and an open IBS Board of Director's meeting.

For further details concerning convention registration, contact IBS at (914) 565-6710.

NEW YORK CITY
BILTMORE HOTEL
MARCH 17, 18 & 19

Success For First West Coast IBS Convention

The University of California's radio station at Berkeley (KALX-FM) hosted the first West Coast IBS Convention this past November at the Jack Tar Hotel in San Francisco on the weekend of the 11th. With over 350 delegates attending (representing some 75 western college radio stations), the convention was regarded as a success by the convention's planners and the participants.

The meeting featured numerous workshops, entertainment showcases, special guest speakers and a large display/exhibit area. Van Amberg, anchorman of San Francisco's KGO-TV "Newscene," delivered the keynote address on Saturday. He urged that broadcasters not compromise themselves by selling out for financial reward. Grey Davis, Gov. Edmund Brown's chief of staff, was the special guest speaker and after delivering an interesting speech, answered questions from many of the student broadcasters attending the convention luncheon.

An entertainment showcase Friday evening featured the music of The Joy and the David Grisman Quintet.

Workshops held dealt with production techniques, the FCC, careers in broadcasting, station publicity, music formatting, and other topics. Record companies were also present — 17 of them — including many national and some regional promotion representatives.

For nearly all of the student broadcasters present, this was their first three-day convention, and the few veteran conventioneers present remarked often at the evident surprise and pleasure felt by the new delegates. "This is the first chance that I've had to really talk about radio" said one student broadcaster; "it's great to find so many other radio freaks." Others commented on the generally friendly atmosphere of the convention, and the quality of sessions offered.

The record company and equipment company hospitality suites were a very pleasant surprise to many delegates, who regarded the suites as a nice complement to the more serious daytime business of talking radio, music and news.

The sessions were, for the most part, intended as "rap" sessions among the student broadcasters present. Representatives from professional stations, including the famous KSAN, were invited to sessions to act as guest speakers and resource people, but the main focus was definitely on inter-station communication. Some delegates did feel that a professional orientation would have been a better idea, and it was agreed that the convention next year (if there is one) would have more of these sorts of sessions.

The staff of KALX deserves to be commended on a fine job. Stacey Stokes, the convention coordinator, and her staff (including Joe Robertson, program coordinator; Carlin Waste, business manager; Tim Devine, record company relations; and nearly 20 or more other KALX people) worked for months on the event. Planning actually started almost a year before the event, when Andrew Reimer (then KALX's manager) asked the magic question: "Why don't we have a convention?"

Convention coordinator Stacey Stokes introduces Keynote Speaker VanAmberg (seated at left) at IBS West Coast Convention Luncheon. Photo by Dave Borst.

Delegates inspect exhibit booths

Southeast Mass. 10-Watters Form Group

The first Southeastern Massachusetts College Ten-Watt Radio Convention was held at Stonehill College in Easton, Massachusetts on December 4.

WSHL-FM, the radio voice of Stonehill College, sponsored the event in which all local ten-watt stations were invited.

Attending the conference were WRSH of Massasoit Community College, WUSM from Southeastern Massachusetts University, WGAO from Dean Junior College, and WMLN from Curry College.

The purpose of this conference was to open up communications between the neighboring college radio stations. It is felt that since most small college stations share common problems, better communication of common solutions to these problems will benefit all.

The conference is hoped to become an annual event.

A special guest editorial by the Director of
The Loyola National Radio Conference

Sammy R. Danna, Ph.D.
Loyola University
of Chicago

When asked to write my first piece for the Journal of College Radio, I told its Editor, Rick Askoff, that I was a bit surprised but most delighted to do so. As sponsor of the Loyola National Student Radio Conference since its inception, in 1971, I guess I thought it was a little out of place to write for JCR, which is published by IBS. I suppose I was going back to my typical youthful ideas of "competition" in almost everything we in America do. In my participation in sports, debate and even publication works, it was always "beat your rival," and I am happy to say this was often the successful case. However, as I get a bit older I am realizing more than ever that while competition in its proper place is good and that there is no substitute for winning (as Vince Lombardi has so forcefully put it), such competition, overdone, can have a negative effect. Thus, as I now look at many things, including my own sports activities, the element of competition can also be destructive — non-fulfilling. Everything must have a balance and be in its proper place or in the right perspective.

Cooperation is also a great virtue and so is "live and let-live." This is what Rick indicated to me as his desire for the relationship between IBS (The Intercollegiate Broadcasting System) and the Loyola National Radio Conference. The Loyola meet has been traditionally held in the early fall — the 9th Annual Conference scheduled for Chicago, Nov. 3-4-5, 1978. The IBS confab has been a spring meet, this year scheduled for New York City, March 17-18-19, 1978. Essentially, the Loyola meet has attracted the bulk of its participants from the midwest and IBS from the northeast with each receiving a fair number from one another's territories.

IBS is a pioneering organization consisting of college student broadcasters and their advisors, governed largely by professionals on a volunteer basis. For decades the annual convention has highlighted IBS work, but the Journal of College Radio, their consulting work of varying degrees and other aids are also notable accomplishments. Traditionally, the IBS convention has taken place in the East, drawing the biggest crowds from the Boston to Washington megalopolis. The conventions are national in intent, also drawing from other areas of the nation, especially the midwest.

For eight years, another annual national conference has complemented that of IBS's, taking place in Chicago each fall. What is now known as the Loyola National Radio Conference began humbly in 1971 as a predominately music-oriented midwestern meet essentially requested and almost wholly backed by the recording industry. The tight playlists of most professional pop and Top-40 stations became excessively restrictive in the late 1960's, excluding many worthy (and some not-so-worthy) new releases or less popular but still notable musical works. In order to counter this, it was felt that exposure on college radio would be a good investment, so record companies started first to back the Loyola and later some similar regional conferences. Virtually all of these other conferences have proven to be short-lived for various reasons. By its third year, due to the prodding of its Faculty Advisor (this author), other elements of college radio were added to the Loyola Conference: business, management, public affairs, news and documentaries, etc. Such have grown over the years to include technical sessions and exhibits, tours of media facilities such as UPI, recording firms, large radio stations and the like. Although the meets began taking on a truly "national character" as early as the third year, it was not until the sixth conference that "National" was adopted in the title and the meet was officially considered such.

This year's meet in Chicago attracted the biggest and most enthusiastic crowd to date, over 650 college and for the first time scores of high school radio devotees from as far away as Alaska and New England. The heart of any such gathering is its group of "sessions," consisting of talks, discussions, symposiums, and the like, featuring professionals, fellow students and others knowledgeable in various fields of radio. As in most past years, these sessions took place in Marquette Center of the Loyola downtown campus (Lewis Towers). Over 40 of them featured notables, particularly from the professional ranks of Chicago radio such as Phil Nolan, general manager of WIND; Bob Sirott, nationally-known WLS rock DJ; Rick Rieman, WMAQ (NBC o&o) News Director; Gary Deeb, nationally syndicated radio-TV columnist of the Chicago Tribune. Numerous others complemented this star-studded array of outstanding professional talent, not only from Chicago but from other parts of the nation as well. Record companies were represented not only by their usually popular "Hospitality Suites" (Sheraton-Chicago Hotel this year) but in various large-attendance sessions on pop music. Featured in a most timely session was BMI Regional Manager Chuck Halteman.

It is hoped that the Loyola and the IBS meets can continue as the two major consistently-held national student radio meets in the fall and spring, respectively. So much good is accomplished by exchanging ideas and airing out common problems, not to mention the highly educational discussion-panel-talk sessions. The record company hospitality suites are always broadly educational, and they offer a chance for inter-personal contacts between students and professionals and a much needed "recreational" break from the often more serious sessions.

Next year's Loyola National Radio Conference will be held at the new Chicago Marriott Hotel (a few blocks from the Lewis Towers Campus), on Nov. 3-4-5, (1978), the 9th annual meet. The IBS Convention on the other hand, will be held in New York City at the Biltmore Hotel on March 17, 18, and 19, 1978.

Editor's note: Dr. Sammy Danna is an Associate Professor, Dept. of Communication Arts at Loyola University, Chicago, and serves as the director and advisor for the Loyola National Radio Conference.

Programming Research for College Radio Stations

by
Ernest Martin, Jr., Ph.D.

General Manager and Faculty Advisor, KJHK-FM; Assistant Professor of Radio-TV-Film, The University of Kansas, Lawrence, Kansas

INTRODUCTION

The "real world" of radio programming is becoming more and more research-oriented. The reason? Competition and the need to base programming decisions on the desires of radio listeners. The college radio station is not in the same "competitive" situation as commercial radio. However, every station should program for listeners. For the college station to be more than an "electronic sandbox," a real commitment must be made to program for listeners. The overall orientation of the programming for listeners rather than solely for the station personnel distinguishes the station as "professional" in approach.

How should you — as station management executives — determine your station's programming? Is it simply made by subjective judgments OR is it based on more objective criteria? If a college radio station is to be listener-oriented, an ongoing method of listener feedback is necessary. The feedback from the audience will help the station management fine-tune programming, as well as program to serve the public interest.

Feedback can, and should, come in several different forms. Telephone calls from listeners, comments of friends, letters to the station, record purchasing data from retail outlets, and attendance at local concerts are valuable sources of information. However, each of these only provide clues or indications of what the **majority** of your target listeners want. For less biased guidelines on which to base management decisions, systematic survey research projects are necessary. In short, programming research, based on audience surveys, is nothing more than an objective method of getting feedback from listeners and potential listeners. The results help management in making listener-oriented programming decisions.

AUDIENCE SURVEYS — THE BASICS

There is nothing magical about doing a valid audience survey of radio listeners. The basics are: 1) decide on the question areas for which you want more information; 2) decide on the survey methodology you want to use; 3) select a sample; 4) write your questionnaire; 5) administer the interviews; 6) tabulate results; 7) analyze the results and interpret the information.

DECIDING ON THE SURVEY METHODOLOGY

Several methods of data collection are available to you. **Personal interviews** have the advantage of being able to collect lots of information but are extremely time consuming. **Mail interviews** or other forms of self-administered interviews do not take much time in the interviewing stage, but there is great bias due to nonresponse rates. Telephone interviews must be relatively short, but can provide information quickly. We have found that telephone interviewing is very advantageous for radio programming surveys. With careful questionnaire design you have a quick, efficient, and valid method for radio programming research. In commercial radio programming and music research, telephone surveys have become the standard methodology used. When I was senior research project director for Frank Magid Associates in 1973-1975, personal in-home surveys were the most common interviewing method we used for major market radio research studies. Today, the Magid organization, as well as other major radio research organizations like The Research Group operating from San Luis Obispo, California, most often field telephone radio programming surveys. Claude Hall in the November 26, 1977 issue of **Billboard Magazine** summarizes the extensive use of call-out research (telephone) by major radio program directors. KJHK, the student operated radio station at Kansas University, does at least four major telephone audience surveys a year. For most campus stations, telephone interviewing is the most viable methodology to use. The advantages are: 1) data being quickly obtainable; 2) the least expensive form of interviewing on a cost per completed interview basis; 3) sample selection is routine; 4) permits relatively easy training and supervision of interviewers.

GUIDE FOR SELECTING A TELEPHONE SAMPLE

First, decide on the "total population" you want to interview. KJHK usually draws a sample based on the "universe" of KU students. At times we field a survey based on fifty percent KU students/fifty percent Lawrence non-students. If you have a recent student directory, sampling is routine. Select three times the number of completed interviews you want. For example, if you want 400 completed interviews, select 1200 numbers for the sample. Divide the number of telephone numbers you need by the number of pages in the directory. This tells you how many numbers you need to select from one page. Measure the number of column inches on an average page in the directory. Divide the column inches by how many numbers you need from each page and you have the interval to select the phone number to call. During the first semester (while the student directory is half-way accurate) we use the actual number drawn. During the second semester and the summer, when the directory is less than up-to-date, we select numbers the same way, but **add a constant of two to the last digit.** For example, if we have selected 864-6040, the number to dial becomes 864-6042. This is a modification of random digit dialing to correct for non-listed numbers in out-of-date directories. The idea behind the selection of numbers for the telephone sample is to spread the selection throughout the directory in a systematic way and to reduce the possibility of bias in the sample selection.

TRAINING OF INTERVIEWERS

Always train the people who will be administering the interviews. Instruct them: 1) to ask the questions the same way for every interview; 2) to follow the sampling plan fully — only dial numbers specified for the sample; 3) to **not** identify your station as the research sponsor until the end of the interview (if at all); 4) to **not** waste a lot of time in the introduction — get to the first question quickly; 5) to record the information as accurately as possible; 6) to make sure only **one** answer is recorded for each question; 7) to be totally unbiased — not registering surprise or disapproval at any answer; 8) to fully "probe" or follow-up on open-ended questions. As a part of the training, each interviewer should do at least one practice interview to get the feel of how to read each question out loud. We also give each interviewer a handbook with all the interviewing instructions listed.

ADMINISTERING THE INTERVIEW

After training, interviewers can begin actually collecting information. A supervisor should be on call to answer questions and solve individual interviewer problems. A deadline date for completion of all field work should be made.

Additionally, selected questionnaires (approximately ten percent of each interviewers work) should be validated to make sure interviews are not falsified. This means you should call back a small random sample of completed interviews — asking whether the person was interviewed, how long the interview lasted, etc. For KJHK surveys we recruit 40-60 students from the beginning radio programming class each semester to help with interviewing. We try to use a large number of interviewers so each person only has to complete 10-12 calls.

TABULATING RESULTS

After the field work is completed, tabulating and analysis requires constructing codes to translate the answers from the questionnaires to a format for computer cards. Keypunching, computer data tabulation, and statistical analysis follow. You should be able to find a faculty member or graduate student to provide help in this process.

FORMULATION OF QUESTION AREAS

The first step in any research project is to determine exactly what problem areas you want to explore. The problem definition must be more than simply asking: "What can my station do to attract listeners?" The problem definition requires singling out all aspects of a station to determine areas for investigation. Some areas you can investigate include: 1) overall station recognition; 2) overall radio station preference/listening; 3) station "ratings"; 4) station "image"; 5) musical desires and preferences; 6) best approaches for news and information programming; 7) contests and promotion; 8) specific program recall and evaluation; 9) reception difficulties; 10) personality evaluations.

You should determine the question areas first. Don't try to investigate everything in one telephone survey. A series of different projects will allow you to research most of these areas with short questionnaires.

QUESTION-WRITING

After the question areas are decided, specific questions can be written to measure opinions relevant to the area. Questions are written in either "closed" style — offering the respondent a choice among two or more alternatives — or "open-ended" style — supplying a frame of reference for respondents' answers with a minimum of restraint on the answers. Additionally, closed "scale" questions — expressing degrees of agreement or disagreement — can be used.

General guidelines for question-writing include the following: 1) Make sure every question relates to the question areas under investigation. Only ask essential questions. "Nice to know" information wastes valuable interviewing time. 2) Choose the appropriate question type. Some information is best obtained by scaled questions, other information by open-ended questions. 3) Make sure the wording is clear and unambiguous. A clear context with explicit frame of reference is the goal. 4) Avoid questions which contain more than one idea. 5) Avoid "leading questions." Your questions should not be worded to suggest answers to the respondent. 6) Avoid asking respondents questions that demand knowledge or information that the respondent does not have. Use screening questions to focus responses. 7) Avoid questions of a highly personal nature. 8) Avoid loaded words that influence results. "Bubblegum rock," "Top-40," etc. are loaded. "Contemporary rock" is less loaded. 9) Avoid questions loaded with social desirability. People tend to give responses that imply approval of things generally considered to be socially "good" and against socially undesired actions.

Always **pre-test** your questionnaire before beginning field work. Administer the questionnaire to a small sample of people to pick out mechanical problems with wording of questions, structure of the questionnaire, etc.

EXAMPLES OF QUESTIONS FOR RADIO PROGRAMMING RESEARCH

Keeping in mind the criteria for question-writing, it is possible to measure listener opinions on virtually every aspect

of radio programming. The following are examples of some of the questions I have used in questionnaires for KJHK and commercial radio stations.

A. Who Is Listening?

1. (Open-ended/Overall Station Awareness) I'd like you to name all the different radio stations you can think of in this area. Please name all you can — even if you don't listen to them yourself.

2. (Open-ended/Overall Station Preference) Of all the radio stations you hear, which ONE station do you usually spend the most time listening to?

3. (Open-ended/Cumulative Listening) What stations have you listened to within the past week?

4. (Closed/Cumulative Listening) Have you listened to KJHK-FM91- during the past week?

5. (Open-ended/Station "Ratings" — Telephone Reconstruct) Please think back to yesterday. I'd like you to very carefully reconstruct your radio listening. Please take your time. What time was it when you first heard anything on the radio? What station was on? Was it AM or FM? How long did you listen to the station? When did you turn off the radio or switch to another station? (Which station was that? How long did you listen to that station?) When was the next time you heard radio? (Repeat series of questions for entire day). (Interviewer: Place an "X" at the quarter hour time period when listening began. Specify station. Check each quarter hour until respondent stopped listening. Repeat throughout entire day.)

B. What is the Image of Stations in my Market?

1. (Open-ended/Image Series) Think about all the different radio stations in this area. I am going to read the beginnings of some sentences. I'd like you to finish the sentence by giving me the name of the first radio station that comes to mind. The station . . . that plays a nice variety of music; . . . that plays more of my favorite records than any other station; . . . that plays music I don't like; . . . that is unpredictable — sometimes it plays good music — sometimes bad; . . . that plays a lot of records I'm tired of hearing; . . . that plays too much unfamiliar music; . . . that has changed for the better lately; . . . where there's always something new and interesting happening; . . . that could use the most improvement; . . . that sounds like it's run by amateurs; . . . that has announcers who talk about interesting things; . . . that has announcers who talk too much; . . . that has contests that are fun to play or listen to; . . . that has annoying jingles singing their call letters; . . . that gives the news in a way that's easy to understand; . . . that I listen to for weather information; etc.

C. News On Radio

1. (Closed/Measure of Importance of News to Listeners) Are you a person who considers news important as a part of your radio listening, or do you more or less just catch the news because it comes on while you're listening to other things?

2. (Open-ended/Desired Newscast Scheduling and Length) Think about a typical weekday. At what times in the morning do you want to hear an updated news broadcast? (For each time mentioned, ask) Do you prefer a detailed report that takes 10 minutes or more, a shorter five minute report, or a one-to-two minute update of what's happening? (Also ask similar questions for the middle of the day, the afternoon, and the evenings).

3. (Scaled/Importance of Radio Newscast Production Factors) I'm going to read a number of different things involved in radio newscasts. Please tell me whether it is very important, somewhat important, or not very important to you in deciding whether a radio station does a good job in giving the news. . . . hearing the actual voices of the people mentioned in the news; . . . having on-the-scene reports from reporters in the field; . . . making the newscast different each hour; . . . giving details about what goes on behind the scenes; . . . coverage of a wide range of subjects; etc.

D. Contests On Radio.

1. (Closed/Interest in Contests) Sometimes radio stations sponsor games and contests. Do you ever go out of your way to hear a station with an interesting contest, do you more or less put up with them, or do you switch stations when a contest comes on?

2. (Open-ended/Reasons for contest interest or disinterest) Why is that?

3. (Closed/Preferences About Prizes) Please tell me whether you agree or disagree with each of the following statements. I would enter a radio station contest if I thought I had a good chance of winning and the prize was . . . a top-10 album . . . $10 in cash; . . . a t-shirt with my favorite radio station's name on it; . . . a pair of movie tickets; . . . a pair of tickets to a major rock concert; etc.

E. Reception

1. (Closed/Measure of Reception Strength) I would like you to tell me whether the reception you get — the quality of sound — is excellent, good, fair, or poor for each of the following stations.

F. Ascertainment of Community Needs

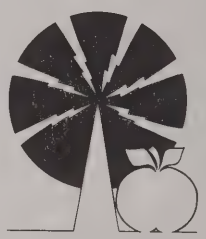
1. (Open-ended/Community Needs) In your opinion, what are the most important problems and needs facing the community area today?

2. (Open-ended/Most Significant Problem) Which of these needs, in your opinion, is the single most important problem or need facing the community today?

SUMMARY

There are many different questions that can be used to provide station feedback from listeners on major areas of station programming. We have only provided a sampling of question areas and questions. You will find, as KJHK has, that one research project is only the beginning. Every study answers some questions — but also points to many new questions for investigation. Very quickly, your appetite is whetted for finding out even more about what the audience wants.

In the next issue . . . Part II of Programming Research for College Radio Stations — Music Research, will take a look at several methods of testing musical desires of listeners.



A Special Selection of Howard W. Sams Books

BROADCAST NEWS HANDBOOK
by Donald W. Miles. Bridges the gap between classroom and newsroom for the beginning broadcast journalist. Written as though the author is the news director addressing a new employee, this guide provides 750 questions to be considered by the prospective newscaster. 392 pages; 5-1/2 x 8-1/2; softbound.
No. 21183 **$9.95**

AUDIO CYCLOPEDIA (2nd Edition)
by Dr. Howard M. Tremaine. A complete audio reference library in itself and the most comprehensive and authoritative work on audio available. Covers every aspect of the audio art—from the basic principles of sound to the latest in solid-state equipment. 3650 entries and hundreds of illustrations and schematics. 1760 pages; 6-1/2 x 9-3/8; hardbound.
No. 20675 **$39.95**

ABC'S OF TAPE RECORDING (3rd Edition)
By Norman H. Crowhurst. Thoroughly explains the fundamentals of modern tape recorder design and operation. Includes detailed discussions on cartridge and cassette recorders and home-movie sounds. 112 pages; 5-1/2 x 8-1/2; softbound.
No. 20805 **$3.50**

TAPE RECORDER SERVICING GUIDE
by Robert G. Middleton. Explains the magnetic circuits involved in transferring signals to and from tape, as well as the usual electronic circuits used in modern tape recorders and players. 96 pages; 8-1/2 x 11; softbound.
No. 20748 **$4.50**

TAPE RECORDERS—HOW THEY WORK (3rd Edition)
by Charles Westcott and Richard Dubbe, revised by Norman Crowhurst. Updated to include the latest in cassette and cartridge recorders, as well as stereo and quadraphonic recording equipment. 240 pages; 5-1/2 x 8-1/2; softbound.
No. 20989 **$5.50**

AM-FM BROADCASTING: EQUIPMENT, OPERATIONS, & MAINTENANCE
by Harold Ennes. Written by a broadcast expert, this book presents engineering fundamentals as well as practical on-the-job information needed by chief engineers or maintenance technicians of an a-m and/or fm broadcast station. Covers modern station operation. 800 pages; 5-1/2 x 8-1/2; hardbound.
No. 21012 **$18.95**

PRACTICAL SOLID-STATE CIRCUIT DESIGN
Jerome E. Oleksy. Starting with only a basic knowledge of Ohm's law, some simple test equipment, and this book, you can construct tailor-made circuits—transistor amplifiers; FET, op-amp, and regulator circuits; and audio power amplifiers. 192 pages; 5-1/2 x 8-1/2; softbound.
No. 21018 **$6.50**

FIRST-CLASS RADIOTELEPHONE LICENSE HANDBOOK (4th Edition)
by Edward M. Noll. An excellent study guide for the first-class radiotelephone license examination. Contains all the material needed to pass Element IV of the FCC examination, including all the questions and answers found in the latest FCC Study Guide. 416 pages; 5-1/2 x 8-1/2; softbound.
No. 21144 **$7.95**

SECOND-CLASS RADIOTELEPHONE LICENSE HANDBOOK (5th Edition)
by Edward M. Noll. Provides all the study material needed to pass the FCC second-class radiotelephone license examination (Elements I, II, and III). All material is based on the *FCC Study Guide and Reference Material for Commercial Operator Examination.* 448 pages; 5-1/2 x 8-1/2; softbound.
No. 21111 **$7.95**

THIRD-CLASS RADIOTELEPHONE LICENSE HANDBOOK (4th Edition)
by Edward M. Noll. Designed as a study aid for obtaining licenses up to and including the Radiotelephone Third-Class Operator Permit with Broadcast Endorsement, this newest edition contains questions and answers similar to those given on the actual examination. 208 pages; 5-1/2 x 8-1/2; softbound.
No. 21353 **$5.95**

30 IC PROJECTS
by Herbert Friedman. Complete instructions, parts lists, and schematic diagrams for 30 different integrated-circuit projects, most of which can be built in a few hours and at low cost. The projects include a walkie-talkie power pack, budget-priced tape-head preamplifier and portable intercom. 80 pages; 5-1/2 x 8-1/2; softbound.
No. 21145 **$2.95**

RADIOMANS GUIDE (4th Edition)
revised by Robert G. Middleton. A well-organized training course for basic electronics, basic radio, and radio receiver repair, especially suitable for home study. 480 pages; 5-1/2 x 8-1/4; hardbound.
No. 23259 **$7.50**

REFERENCE DATA FOR RADIO ENGINEERS (6th Edition)
This popular reference book has been a favorite of radio and electronics engineers since 1942. This edition has three new chapters on active-filter design, optoelectronics, and optical communications. There are also chapters on microminiature electronics, space communication—to name just a few. Hundreds of charts, nomographs, diagrams, curves, tables, and illustrations. 1344 pages; 6-1/2 x 9-1/2; hardbound.
No. 21218 **$30.00**

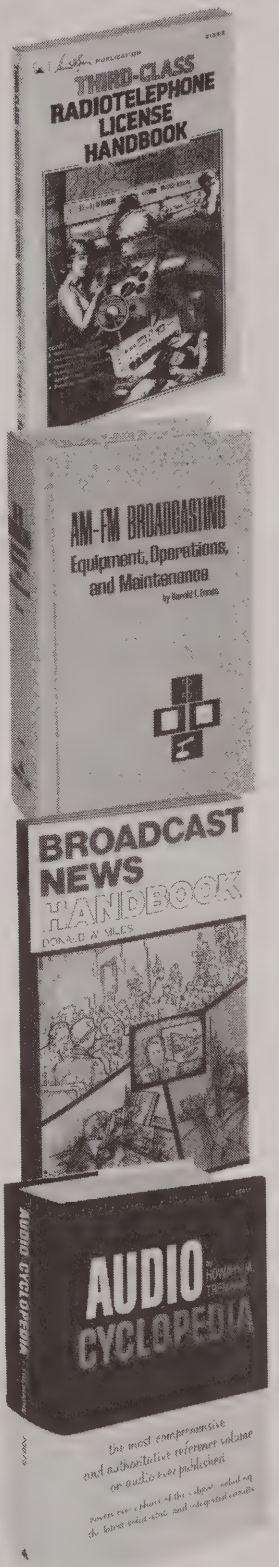
MODERN DICTIONARY OF ELECTRONICS (5th Edition)
by Rudolf F. Graf. Nearly a million copies of previous editions of this authoritative, comprehensive reference have been sold. This new up-to-date version contains concise definitions of approximately 20,000 terms. Also includes separate coverage of schematic symbols, the International System of Units (metric) and a table of the Greek alphabet. 832 pages; 5-1/2 x 8-1/2; hardbound.
No. 21314 **$18.95**

TRANSISTOR SUBSTITUTION HANDBOOK (16th Edition)
by the Howard W. Sams Engineering Staff. Lists replacements for over 17,000 American and foreign bipolar transistors. 448 pages; 5-1/2 x 8-1/2; softbound.
No. 21333 **$4.95**

DIGITALS IN BROADCASTING
by Harold E. Ennes. Provides a practical background in digital technology as applied in broadcast control systems and signal-processing devices. Includes necessary mathematical and circuit fundamentals, studies of typical equipment, and suggested troubleshooting procedures. 384 pages; 5-1/2 x 8-1/2; hardbound.
No. 21414 **$14.95**

COMMERCIAL RADIOTELEPHONE LICENSE QUESTION & ANSWER STUDY GUIDE (3rd Edition)
by Edward M. Noll. Prepares the reader to take the examinations for the various grades of radiotelephone licenses. The questions are representative of those used in the FCC examinations. 304 pages; 6 x 9; softbound.
No. 24033 **$8.50**

RADIO HANDBOOK (20th Edition)
by William I. Orr, W6SAI. This famous communications handbook is the electronics industry standard for engineers, technicians, and advanced amateurs. Explains how to design and build all types of radiocommunications equipment. Includes ssb design and equipment; rtty circuits, linear amplifiers, both solid-state and tube types; and more. 1080 pages; 6-1/2 x 9-1/4; hardbound.
No. 24032 **$19.50**



Please send check or money order to:
JOURNAL OF COLLEGE RADIO
Box 592, Vails Gate, N.Y. 12584

E-X-T-E-N-D-I-N-G the LIFE of VACUUM TUBE EQUIPMENT

by Ludwell Sibley

In the present era it's almost embarrassing to talk about vacuum tubes. But there are still great numbers of good tube recorders, consoles, transmitters, and test instruments in broadcast use, and stations with limited budgets have to get maximum use out of what they have. The same stations can expect donations of used tube equipment from commercial stations in the future. So it should be helpful to explore ways to preserve the usefulness of equipment using, er, gaseous-state field-effect technology.

Replacement tubes are getting hard to find. One major electronics distributor whose catalog showed 5,400 types six years ago now lists only 287. The market has declined to the extent that RCA, once the largest maker, abandoned production of receiving tubes two years ago.

Where tubes are still available, their prices are rising fast. A typical order for seven types used in college stations — one 6AQ5, 6CA7, 6L6GC, 12AU7A, 5879, 6146A, and 6550 — cost $18 in 1967, $23 in 1972, and $45 in 1977. That works out to a modest 4% rise per year between 1967 and 1972, but 15% yearly since then. One distributor's catalog prices for the above set of tubes jumped 24% in the last year.

We are fast approaching a situation like that in World War II, when tubes for civilian use were scarce. Service technicians became expert at tube substitution — rewiring or changing sockets, using beam tetrodes as rectifiers, and the like. There were even commercial socket adapters to allow plug-in substitution of certain types.

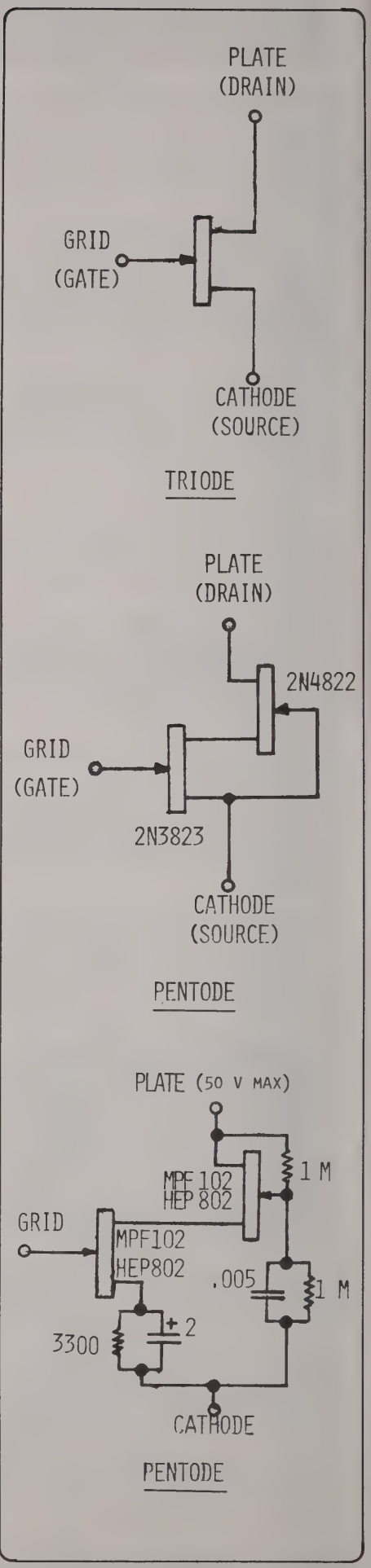
A station with tube equipment can modernize its gear to some extent. Tube rectifiers are easy to convert. On an ordinary full-wave rectifier, use two strings of silicon diodes. The total peak-reverse-voltage rating of each string must be at least 3.14 times the DC output voltage. A safety factor of two above this minimum is strongly recommended. Wire a 100-kilohm resistor across each diode to give all units the same reverse voltage. Otherwise the diode with highest back resistance will receive most of the voltage and will fail. Cheap unmarked diodes (factory rejects) sold in bulk work fine, but check their polarity — out of one bag of 100, a third had the polarity marking molded into the case backward.

A tube power supply converted to solid-state will usually give about 20 extra volts. To get the voltage back near normal, move the input capacitor in the filter to the output, giving a choke-input filter. Or wire the former rectifier-filament winding on the transformer in series with the primary winding, poled to give lower output voltage.

On bridge rectifiers used in transmitters, each diode string need be rated for only 1.57 times the output voltage, with a safety factor of two or three recommended.

For those who prefer not to build their own diode strings, prepackaged plug-in tube replacements are available.

Low-power diodes, like the 6AL5 sensing rectifier in audio compressors and limiters, require some consideration. The conduction curves for



tube and solid-state diodes are somewhat different. The tube conducts even when slightly back-biased, but solid-state units do not conduct significantly until forward-biased by about 0.3 V for germanium or 0.6 V for silicon. This difference may or may not matter in a given circuit. Germanium diodes are generally preferred as replacements, and high-conductance or hot-carrier devices are better yet. In troublesome cases it may be necessary to add a bias resistor to contribute a small amount of forward bias.

Gas regulator tubes are easy to replace. The octal ones (OA3, OB3, OC3, OD3) are replaceable with zener diodes rated at 75, 90, 105, or 150 V and three to six watts respectively. The miniature regulators (5651, OB2/OC2, OA2) take diodes of 87, 105, or 150 V respectively, at 0.3, 3, or 5 watts. (Zeners rated for less power can often be used if the power at which the tube actually operates is measured or calculated.) In the usual case where a positive voltage is being regulated, "reversed" zeners with anode connected to the mounting stud can be bolted directly to the chassis.

Triode and pentode voltage amplifiers operating at low power can be converted to operation with field-effect transistors, since a FET acts much like a triode. The accompanying figure shows three useful circuits: direct replacement of a triode, a basic cascade connection to replace a pentode using a high-voltage-rated FET, and a more complex pentode replacement using lower-voltage but cheaper units.

As the above implies, in a converted amplifier one must either reduce the "plate" voltage to meet the rating of the FET or use a high-voltage device. The existing cathode resistor usually gives the right bias voltage. Unused tube leads (heater, screen, suppressor) are simply ignored. For pentodes used in some oscillator circuits, electron-coupled for instance, it is necessary to add a resistor and capacitor in parallel between the old plate and screen leads to give the necessary feedback path.

The converted amplifier, of course, has no microphonics or heater-induced hum. Converted pentode preamplifiers can easily be quieter than the original version.

For reference and substitution purposes, the transistors shown in the figure are N-channel JFETS with the following characteristics. The 2N3823 has a noise figure of 2.5 to 3 dB, a transconductance of 3500 to 6500 micromhos, and a breakdown voltage of 30. The 2N4882 has less transconductance but a 300-volt breakdown. The MPF102 has 2000 to 7500 micromhos' transconductance, and a voltage rating of 25.

Plug-in FET replacements for tubes like the 6AK5, 12AX7, and 12AT7 are available from Teledyne, as are complete kits for certain Hewlett-Packard instruments. Heath sells a pair of plug-ins (12AU7 and 6AL5) for its vacuum-tube voltmeters, turning them into instant FET-VOMs. Telephone companies have converted thousands of tube carrier systems to FET operation with Teledyne and Western Electric FET units.

There is no replacement in sight for higher-power tubes. This is a serious matter, considering the number of tube carrier-current and FM transmitters with years of service life left.

Of particular concern is the 7984 tube used in 20-watt c-c transmitters. This is a "compactron" made only, as far as is known, by General Electric. It was used in GE mobile radios in production as recently as about three years ago, and is still available. If it becomes unobtainable, the 6146B is a natural choice as a replacement. It was used in earlier transmitter models, with the only significant circuit difference being use of a 15-kilohm 5-watt screen resistor. It will require a change of socket and rewiring of the heater leads to give 6 volts. The 6146B is widely used in commercial transmitters, hence will probably remain available relatively long. Its only drawback is that, at the relatively low plate voltage used in c-c equipment, it may not modulate as well as the 7984.

New tubes for European equipment may become particularly hard to find in the future. A good tube substitution book is essential here. If all else fails, and no diagram or instruction manual is available, the coding scheme used by **some** European tubes is as follows. The first letter gives the heater voltage: D, 1.5; G, 5; E, 6; H, 12 to 17.5; L, P, or X, undefined. If the heater is split, as for 6- or 12-volt use, the character for the lower voltage is used. The next letters show the tube type(s) included: A, low-power diode; B, dual low-power diode; C, triode; F, pentode; K, pentagrid converter; L, beam tetrode; M, electron-ray indicator; Y, high-voltage diode; Z, high-power dual diode. The two or three numbers that follow are arbitrary. As an example, an EBF32 is a 6-volt dual-diode-pentode. However, there are many tubes with letter-number codes that don't follow this system.

The fast-climbing prices of tubes force the writer to recommend, in all seriousness, that stations stock up now on tubes that are becoming scarce. Station engineers would do well to make up a list of their tube gear with its expected retirement year, then compare the tubes with a list of types that are likely to stay readily available. A good idea of types in this "popular" class is the 70-item list in the current Radio Shack catalog, down from 130 types not long ago. Then order and pack away enough spares of the unlisted types to carry the equipment until it can be replaced. Another reason to stock liberally now is that the eventual resale value of the equipment will be a lot higher if sold with spares. (By contrast, the writer once **gave away** a working Phasitron FM exciter.)

With prices climbing as fast as they are, it is hard to go wrong economically by stocking up now. That is, a dollar spent on tubes today will save $1.15 worth next year, or $1.32 two years hence. The same dollar put into a savings account will return only about 5½ cents' interest in a year, or slightly less than the rate of inflation. It would be foolish to have to replace $2000 or $3000 worth of transmitter(s) when $200 worth of spare tubes today will keep the equipment going for at least five years more.

In theory, a buy-now program can only speed the end of tube manufacture. However, the tube purchases of the whole college-radio industry are only a tiny part of the total. The issue is solely one of protecting your station's interests — of buying time until the station can raise money to buy solid-state equipment.

To help stations plan their tube replacements, **Master Handbook** section 59.49 is being expanded to include an extensive list of substitute types. Further references on the topic are B. Burman, "Vacuum Tubes Yield Sockets to Hybrid JFET Devices," Electronics, April 10, 1972, and J. Fisk, "Pentode Replacement," Ham Radio, February, 1970, p. 70.

Additions and Corrections To The IBS Annual Directory

Since compiling the information for December's **Annual Directory**, many stations have become members of IBS. Also, several stations have reported corrections to information listed last month. Unfortunately, the amount of time required for printing the directory makes it impossible for us to include more extensive information on each new station. However, by next year, the complete information will appear for each member.

Alabama

WCAL-CC Calhoun State College 902

Arkansas

KGED-FM Arkansas College 614
KLRE-FM Little Rock School District 884

California

KCSC-CC-CAFM California State University — Chico 021
P.O. Box 1580; 895-6228; 590 KHz, 95 mHz; en 12,000; pa 6,000; 19 hpd; 7 dpw; Progressive rock, soul - jazz; American Info Radio Network.

Radio Station Cerritos Community College 958
Radio Station Cypress College 933
KWEB-CC Webb School 904

Colorado

KASF-FM Adams State College 893

Connecticut

WWEB-CC Choate School 911
Greenwich High School 517

Florida

WERU-CC Embry-Riddle Aeronautical University 918

Georgia

Radio Station Abraham-Baldwin Agricultural School 907
WVGS-FM Georgia Southern College 939

Illinois

WVRX-CC Columbia College 633
P.O. Box 11343; (312) 663-1693; en 3000; pa 2500; 16 hpd; 5 dpw; 80 hpw; Michael Hartman, GM; Martin Murphy, CE; Ron Noble, PD; Al Parker, Adv; Hartman/Noble, MD; Contemporary, jazz, soul; UPI.

WDPU-CC DePaul University 892
WLTL-FM Lyon's Township High School 943

Indiana

WEVC-FM University of Evansville 451

Iowa

Radio Station Iowa Central Community College 908
Radio Station Morningside College 917
WGVU-CC University of Dubuque 340
(319) 557-2236; 25 W; 790 khz; 900 en; 500 pa; 12 hpd; 7 dpw; Marie Shaw, GM; Todd Hopkins, CE; Lyn Taylor, PD; John Remy, Adv; Scott Evans, MD; Primarily top 40 & easy listening.

Kansas

KDSA Defenders School of the Air 948

Kentucky

WLCR-CC Lees Junior College 919

Louisiana

WTUL-FM Tulane University 131

Maine

WBCC-CC Bunker Hill Community College 891
WMEH-FM University of Maine 950

Maryland

WGPR-CC Georgetown Preparatory School 945

Massachusetts

WBUR-FM Boston University 913
WBMT-CC Masconomet Regional Schools 935
WRAZ-CC North Essex Community College 925
WMFO-FM Tufts University 926
WMS-CC
WCFM-FM Williams College 895

Michigan

WCAL-CC Calvin College 942

WCHP-CC Central Michigan University 512
7 Anspach; (517) 774-3923; 24 hpd; 7 dpw; Jack Johnson, GM; John Herbacher, CE; Tim Robinson, PD; Jim Wojick, Adv; Tim Robisch, MD; Top 40 - AOR mixture; UPI.

WCSG-FM Grand Rapids Baptist College 921
Radio Station Monroe Public Schools 886
WOUX-CC Oakland University 951
Radio Station Saginaw School District 923

Minnesota

KMAC-CC Macalester College 922
KRPR-FM Rochester Community College 952

Missouri

Radio Station Penn Valley Community College 896

Montana

KEMC-FM Eastern Montana College at Billings 940

Nebraska

Radio Station Omaha Public Schools 957

New Hampshire

WKNH-FM Keene State College 485

New Jersey

WJCS-CC Jersey City State 910
WLBS-CC Livingston College, Rutgers University 471
LPO 13112; (201) 932-4170; 640 mHz; 6,500 en; 5,000 pa; 17 hpd; 7 dpw; David Brockington, GM & CE; Ken Jones, PD; Ken Holt, Prod. Dir.; David Katz, ND; Tim Maclearie, PR; Dir.; James Holloway, MD; Weusi Salim, Adv; Progressive; UPI.
WBGO-FM Newark Public Radio 894
WRCB-FM Rutgers University 674
406 N. Penn St.; (609) 757-6155; 10W - 89.5; John Majane, GM; Charles Fricker, SM; Rick Krhaewski, PD; Ron Griscom, MD; Steve Raybar, Sec.

New York

WBCC-CC Bronx Community College 724
181st St. & Univ. College; (212) 231-1472; 10,497 en; 12,075 pa; 10 hpd; 5 dpw; Kenneth Kephart, GM; Tom Padwa, CE; Howard Vines, PD; Peter Velez, Adv; Robert Waldman, MD; Across board.WSCB-CC Buffalo State College 446
WTSC-FM Clarkson College 890
WCEB-FM Corning Community College 862
Box 200; (607) 962-9330; 10W; 91.9; 2,003 en; 7,000 pa; 9 hpd; 5 dpw; Beth Cornell, GM; Peter Mantz, CE; Rick Stratton, PD; Vic Kallek, Dr. Thompson, Adv; Progressive AOR.
WNYT-CAFM New York Institute of Technology 353
P.O. Box 429; (516) 686-7577; 70,000 pa; 24 hpd; 7 dpw; Linda Jay, GM; Tom Jay, CE; Bob Kranes, PD; Dave Davidson, Adv; John Weston, MD; Doug Edwards, OD; Progressive, top 40; UPI.
WNCB-CC Niagara County Community College 885
WRNU-CC Niagara University 949
WRHR-FM Rush-Henrietta Central School 746
1799 Lehigh Sta. Rd.; (716) 334-7745; 10W; 90.5; 10,000 en; 30,000 pa; 4-6 hpd; 5 dpw; George Michel, GM; Les Wetherbee, CE; Peter Polfliet, SSM; David Sisson, Adv; Ken Breese, MD; Top 40, MERA.
Radio Station Sodus Central School District 916
WIRC-CC S.U.N.Y. of Buffalo 909
WDTU-CC S.U.N.Y. at Delhi 888
WATC-CC S.U.N.Y. at Farmingdale 934
WKDT-FM West Point Military Academy 914

North Carolina

WLHR-CC Lenoir Rhyne College 929
WVFN-FM University of North Carolina at Charlotte 463
WNGC University of North Carolina at Greensboro 920

Ohio

WRDL-FM Ashland College 887
WDCW-CC Defiance College 032
WDUB-FM Denison University 415
Radio Station University of Akron 927
WYSU-FM Youngstown State University 912

Oklahoma

KALU-FM Langston University 953

Oregon

KALU-FM Crater High School 947
KGFC-CC George Fox College 932
KTEC-FM Oregon Technical Institute 937
KRRC-FM Reed College 109
(503) 771-112; 10W; 89.3 mHz; 1,100 en; 75,000 pa; 20 hpd; 7 dpw; Ron Frenk, SM; Aaron Reynolds, CE; Martin Johnson, PD; George Scheater, Adv; Ron Frank, MD; Variety, free format.

Pennsylvania

WVCS-FM Cal State College 898
WCSR-CC Cheyney State College 541
WKDU-FM Drexel University 905
WEHR-CC Penn State University 928
WCLH-FM Wilkes College 936

South Carolina

Radio Station Sea Pines Academy 900

Texas

KSUG-FM South West Adventist College 941
KTSU-FM Texas Southern University 897

Utah

KEPH-FM Snow College 931

Vermont

WJSC-FM Johnson State College 448
WVUS-FM Windham College 906

Virginia

WGMB-CC Bridgewater College 012
WLRC-CC Emory-Henry College 349
WNHS-FM I.C. Norcom High School 946
Radio Station Radford College 954

Washington

Washington State University 903

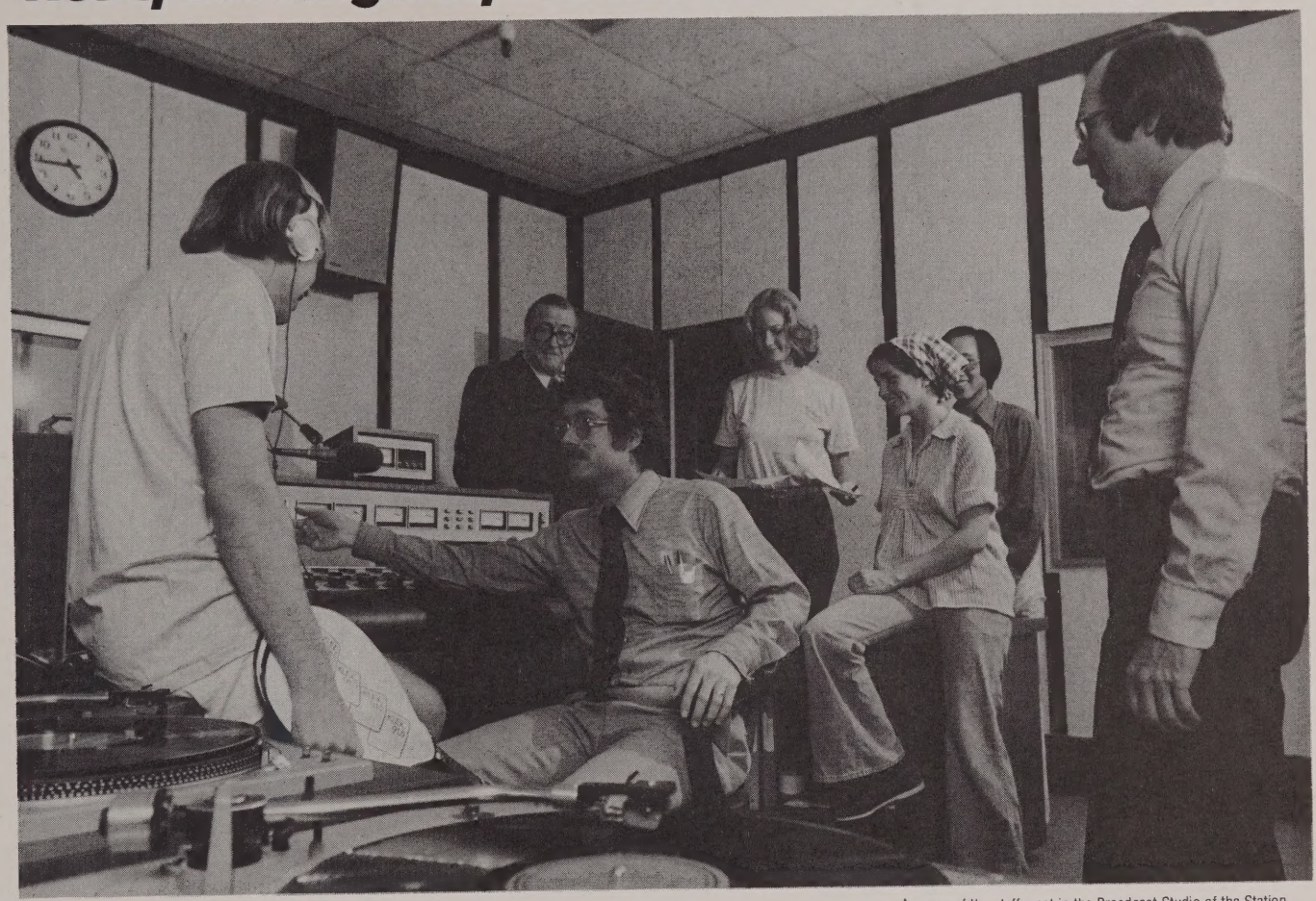
Wisconsin

WBCR-FM Beloit College 944
WGBW-FM University of Wisconsin 889

Canada

CFMU McMaster University 956

It was a college broadcast facility; Now it's a public radio station; KUSC, Los Angeles, still has a Stanton in every table



A group of the staff meet in the Broadcast Studio of the Station.

It is interesting that the station which provides top quality classical music service to Los Angeles was an outgrowth of a College Radio Station ... and still bears its original call letters.

It now has been incorporated into the public broadcasting system since it was regarded as a highly important facility and resource to the city of Los Angeles. It serves all of Los Angeles, Ventura and Orange Counties (10 million persons in the market), with a format of 85% classical music and 15% informational programming primarily from the National Public Radio Service. KUSC goes direct from disc to air and uses the Stanton 600E on its turntables.

Since the station has received substantial university support for upgrading their sound, which includes a new transmitting system ... new tower antenna ... new control board ... new turntables ... *and* new cartridges ... KUSC plans to install Stanton's Calibrated 681SE cartridges in all their turntables.

So, their sure-to-improve sound is certain to have a favorable impact on their growing audience.

Stanton's 681 Calibration Series cartridges offer improved tracking at all frequencies. They achieve perfectly flat frequency response to beyond 20 Kc. And the top-of-the-line superb 681 Triple-E has an ultra miniaturized stylus assembly with substantially less mass than had been thought possible to achieve.

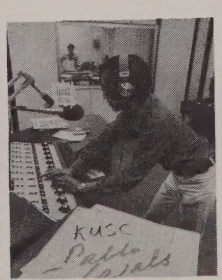
Each 681 Series cartridge is guaranteed to meet its specifications within exacting limits, and each one boasts the most meaningful warranty. An individually calibrated test result is packed with each unit.

Whether your usage involves recording, broadcasting or home entertainment, your choice should be the choice of the professionals ... the STANTON 681.

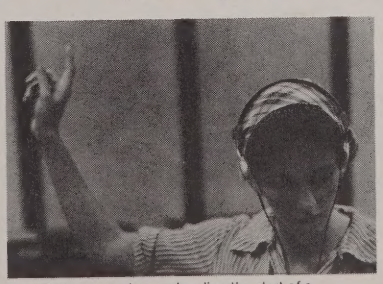
Write today for further information to: Stanton Magnetics, Inc., Terminal Drive, Plainview, N.Y. 11803.

STANTON

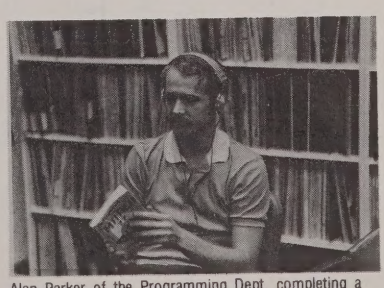
Ellen Falconer, a broadcast engineer, with two of her associates.



Gilbert Kuang, engineer, at the Master Control Console.



Ellen Falconer, engineer, signaling the start of a scheduled broadcast.



Alan Parker of the Programming Dept. completing a critical listening session in the Record Library.

COME ONE ...

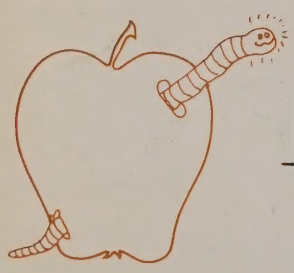
COME ALL!!!

The 39th Annual

IBS National Convention

NEW YORK CITY
BILTMORE HOTEL
MARCH 17, 18 & 19

The biggest and best of the college radio conventions---in NEW YORK CITY---with broadcast professionals from the New York stations and networks, record companies, equipment exhibitors, news services, and 700 or more radio people like you.



BE THERE !

SEE YOUR STATION MANAGER FOR DETAILS.

THE INTERCOLLEGIATE BROADCASTING SYSTEM
P.O. BOX 592
VAILS GATE, NEW YORK 12584